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ABSTRACT

Personality characteristics of 101 epileptic children in two age groups (5-11 and 11-16) were studied by means of the child-reported Missouri Children's Picture Series and the mother-reported Missouri Problem Behavior Checklist. Scores for each age group across both parent and child reports were compared to published norms. A one-way multivariate analysis of variance was conducted to determine age related differences. Results indicated that on child report, both the younger and older groups scored well within the range reported for normal children and that older children reported lower activity levels and less maturity than younger Ss. In contrast, mothers' reports did not discriminate between age groups but indicated levels of probem behaviors that significantly exceeded published norms for the entire sample. (Author/CL)

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Age related personality characteristics of epileptic children: Parent and child reports

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Abstract

Personality characteristics were examined by means of the child-reported Missouri Children's Picture Series and the mother-reported Missouri Problem Behavior Checklist for 101 epileptic children. Two age groups were studied. Group 1 consisted of 48 children ages 5 to 11 and Group 2 was maue up of 33 children ages 11 through 16. Scores for each group across both parent and child reports were compared to published norms. The way MANOVAs were conducted to determine if the two age groups demonstrated different patterns of characteristics on either the child or parent report instrument. Results indicated that on child report, both the younger and older group scored well within the range reported for "normal" children and that older children reported lower activity levels and less maturity than younger subjects. In contrast, the mothers' reports did not discriminate between age groups but indicated levels of problem behaviors that significantly exceeded published norms for the entire sample. The discripancy between child and parent reports and its implications for research with this population is discussed.

In 1973, a federal review conservatively estimated that epilepsy affects one out of every 100 people in the United States. Annual costs related to the disorder reach nearly three billion dollars. Approximately one half of all epileptics die of seizure related causes and their general life expectancy is ten years below that of the population at large. Although epileptics lead essentially "normal" lives, research has documented the potential for seizure disorders to adversely affect emotional functioning, adaptive behavior, school performance and employment history. Clearly, the disorders subsumed under the epilepsies pose a significant challenge to personal adjustment. In addition, it must be emphasized that 75% of all epileptic diagnoses are made prior to adulthood, 50% before adolescence (Dodrill, 1981; Svoboda, 1979). Epilepsy is primarily a developmental disorder which most often acts within the context of a rapidly developing and not yet fully mature organism. Consequently, it is especially important to investigate the psychosocial impact of the disorder within a developmental framework.

Efforts to assess the psychosocial aspects of childhood epilepsy have centered on questions of levels and patterns of functioning. Do epileptic children experience more psychological problems than non-epileptic youngsters? Is epilepsy associated with a particular personality pattern or behavioral syndrome such as aggressiveness or hyperactivity? Does the psychosocial functioning of epileptic children vary with age? To address these issues, researchers have relied on evidence from two major sources: 1) incidence of psychiatric diagnoses, and 2) parent, teacher and child reports of emotional and behavioral func-

tioning. The studies reach consensus in some areas and open others for further inquiry.

Incidence of psychiatric diagnoses. Efforts to assess the psychological impact of childhood epilepsy have paid special attention to the incidence of emotional disturbance in this population. In a very comprehensive series of studies, Rutter and his colleagues (Rutter, 1977) examined a sample of children selected from the Isle of Wight studies and classified them into three groups: 1) neuro-epileptic (5-14 year olds suffering an overt disorder above the brain stem, primarily epilepsy and cerebral palsy), 2) physical handicap (10-12 year olds with diseases such as asthma, diabetes, polio) and 3) general population (ages 10-11 years). His results indicated that as many as one third (34.3%) of the neuro-epileptic children were diagnosed as psychiatrically disorder in contrast with 11.5% of the physically handicapped and only 6.6% of the general population samples. The pattern remained unchanged even when the age range of the neuro-epileptic group was restricted to that of the handicapped group. Furthermore, no single psychiatric syndrome emerged to characterize the neuro-epileptic sample. Rather, results indicated that the neuro-epileptic children demonstrated the usual mix of emotional and conduct/behavior disorders seen in children who do not suffer brain dysfunction.

While the Isle of Wight Studies do not imply any causal relationship between epilepsy and psychiatric impairment, they do suggest that extent of increased risk epileptics face during childhood years. In addition, the variety of disorders found refutes the notion of an

"epileptic personality type" consistent with existing literature (Bridge, 1949; Hermann, 1977; Tizard, 1962). The repeated failure to discern a characteristic pattern of personality functioning among epileptics suggests that the exact type of problem depends more on the quality of fit between the individual's characteristics (abilities, disabilities, history, etc.) and the context of environmental constraints (stresses, resources, expectations, etc.) much as it does for any individual. The issue is no longer a search for characteristic patterns of pathology but rather an examination of the patterns of coping and adjustment these children show in meeting environmental demands.

Any attempt to study adjustment in children however, must consider the relatively rapid developmental changes that occur during childhood and adolescence. Both individual characteristics (cognitive abilities, maturational level, social skills) and environmental demands (rates of life change, parental expectations, educational tasks) change with a child's increasing age. The types of personal adjustment required of an 8 year old are both qualitatively and quantitatively different from those faced by a 14 year old. While Rutter and his colleagues did not address the issue of change over the age span, several researchers have provided data regarding age related differences in the incidence of psychiatric diagnoses among epileptics.

Perhaps the most optimistic data has been provided by Lindsay, Ounsted and Richards (1979a, b, c) who conducted a longitudinal follow-up study of 100 children suffering from limbic seizures. The first analysis, performed in 1964 (Ounsted, Lindsay & Norman, 1966), reported a preponderance of dianostic problems including mental deficiency, school failure and conduct disorders. At that time only 15 of the

100 children were considered free from significant psychological problems. Yet at adult age follow-up, fully 70% of the subjects were free of psychiatric disorder once mental deficiency was excluded. The authors argue for the presence of a strong self-righting tendency in the lives of the majority of children studied.

In contrast to the Lindsay series, Pritchard, Lombroso and McIntyre (1980) conducted an examination of young adults suffering temporal lobe epilepsy which indicated that twenty of the 56 subjects suffered psychological impairment. The onset of psychological disorder occurred during adolescence for all but three of the twenty diagnosed subjects. Their results suggest that the incidence of psychiatric disturbance may increase with age.

While the Lindsay and Pritchard investigations appear to arrive at contradictory findings this may be due to the differences in the use of longitudinal versus cross-sectional research designs or differences in the use of diagnostic criteria. Rodin (1980) reported results from two cross-sectional studies conducted at the Lafayette Clinic with patients representing the variety of seizure disorders seen in an outpatient clinic setting. Among a sample of 365 late adolescent and early adult age patients, they found 23% demonstrated no intellectual, emotional, or neurological impairment (beyond recurrent seizures) while 54% of the sample evidenced behavioral distrubances. In a second study designed to assess the need for early intervention, 133 child cases were reviewed. In sharp contrast to the first study, 68% of the children were classified as suffering from epilepsy with

no intellectual, emotional or neurological disorder and only 9% were found to experience epilepsy associated with behavioral disorders, suggesting that behavioral problems are relatively rare throughout childhood and only become prevalent in adolescence and early adulthood.

Discrepancies between studies which suggest that psychiatric risk increases as the child ages and studies which suggest a decrease with age cannot be readily reconciled. Differences exist across studies regarding the criteria for assigning psychiatric diagnoses. Such inconsistencies yield no standard basis of comparison common to the studies. Hermann (1977) and Tizard (1962) have addressed this problem in epilepsy research generally and argue for the use of more standard measurement techniques with known characteristics of reliability and validity.

In summary, the studies of the incidence of psychiatric diagnosis among epileptic children suggest that as a group, epileptic children are at a higher level of risk for psychological dysfunction than non-epileptic younsters. In terms of patterns of disorder, there is no evidence for a typical "epileptic personality" syndrome, although there may be an age related difference in level of general psychiatric risk. However, the use of diagnostic categories to measure psychological disorder is only a very gross index which is of indeterminate reliability and may carry quite different meanings across studies. The results of such investigations must be considered as only tentative and need to be replicated with more reliable standardized measurement techniques. The use of standard measures should provide more reliable and valid

data with which to examine the level and patterns of psychological adjustment among epileptic children.

Parent, teacher and child self reports measures of personality. A number of investigators have employed more direct and standardized measures of child functioning through parent, teacher and child self-report. In terms of overall level of psychological functioning, a number of studies provide evidence of greater degree of psychosocial problems among epileptic children. Long and Moore (1979) conducted a small but detailed comparison between epileptic children (ages 6-14) and their siblings which indicated that mothers rated their epioeptic child as more self-directed (Manchester Scales of Social Adaptation, Lunzer, 1966) than the sibling and both parents and teachers indicated a greater degree of social isolation and neuroticism (Child Behavior Rating Scales, Rutter, etal., 1970) as characteristic of the child with seizure disorder. While the Long, et al. study was limited to comparisons only within families of epileptic children, Green and Hartlage (1971) compared 50 epileptic children (ages 6-18) to a sample of "normal" controls by means of the parent reported Vineland Social Maturity Scale (Doll, 1947) which also indicated that epileptics scored significantly higher than controls in the area of self-direction and nonsignificantly lower on items of socialization and communication. Although not directly comparable, these studies show sufficient similarity to warrant further investigation of issues related to self-direction and social behavior. They also demonstrate the value of assessing epileptic children across a variety of domains which allows both relative

stengths and weaknesses to emerge.

While parent and teacher reports provide useful information regarding how epioeptic children are perceived by caretakers it is important to supplement such data with measures of the child's own self reported personality functioning as well. Several studies which provide additional data based on child self-report suggest that epileptic children score higher on measures of dependency (Hartlage, Green & Offutt, 1972) and lower on a self-esteem scale (Long & Moore, 1979) in comparison to non-epileptic children.

Thus, studies utilizing more standard assessments of parent and child reported functioning suggest that the overall adjustment of epileptic children is not necessarily significantly worse than that of "normals". Rather, these children may be at risk for specific problems and may show better than "average" adjustment in other domains. Whether areas of relative strength or weakness change with age cannot be determined from these investigations. The results have been found with samples ranging in age from 6 to 16, therefore the inclusion of children and adolescents in the samples may obscure differences in level and pattern of functioning associated with age. Given the qualitative and quantitative differences in abilities, skills and expectations of 6 vs. 16 year olds, further examination of age differences is warranted.

The importance of an age factor related to personality adjustment has been indicated in two studies. Berent, Boll & Giordani (1980) evaluated the parent reported coping skills of a sample of right and left

lateralized seizure patients. They found that while right and left patients did not differ in coping abiliti at younger ages, significant differences emerged among the older age group such that older left lateralized patients were reported to cope more poorly than older right lateralized patients who in turn performed more poorly than both right and left lateralized younger patients. The results suggest that parents report differential coping success in part dependent on age. In a similar demonstration of age dependent factors, Stores (1978) reported epileptic boys to be more dependent than normal controls but the type of dependency varied significantly with age. Younger boys (11) required more maternal affection and older youth required more practical assistance from their mothers. Such results, when viewed in a developmental context, render the data significantly more interpretable and more accurately describe the process of adaptation.

The use of objective and standard measures of psychosocial functioning has provided a good deal more complete data with which to assess epileptic children. Standard measurement devices enables comparisons to be made across studies and the use of multiple measures provides an opportunity for both relative strengths and weaknesses to emerge in comparing epileptic youngsters to controls. While this represents a significant methodological improvement, few studies provide data with which to compare the epileptic children to standardized norms. Although it is valuable to know whether epileptic youngsters score differently than non-epileptic controls with respect to a particular standard measure, it is not sufficient data with which to assess level of func-

tioning. It is entirely possible for epileptics to demonstrate more dependency, for example, than controls but for epileptics and controls both to evidence dependency levels that are within age appropriate norms. Differences between epileptics and control children do not necessarily imply pathology. The use of standard measures which have been normed on large and representative samples of children could better address this issue and would provide a significantmethodological improvement.

In summary, the growing research literature regarding the psychosocial impact of childhood epioepsy, although not yet extensive, does suggest several preliminary conclusions and directions for continued study. Evidence to date does not support the existence of an "epileptic personality type" among children. Research relying on incidence of psychiatric diagnosis as well as more direct assessment of children through parent and self-report argues that the types of behavior problems of epileptic youngsters are as varied as those shown in the general population. Thus the psychological strengths and weaknesses are not specific to the disorder but rather reflect the adaptation children with a particular constellation of abilities and disabilities make to environmental demands. Whether epileptic children are at greater risk for problems in such adaptation generally or during specific age periods does not appear as certain. Studies of the incidence of psychiatric diagnoses suggest that epileptic youngsters do encounter more problems, although studies disagree whether these problems are more prevalent during childhood or adolescence and young adult years. The

confusion may in part reflect the differences among studies in diagnostic criteria and methodological design. Investigations which have used more standard assessment devices to compare epileptics with control samples suggest that children with seizure disorders do demonstrate a different pattern of strengths and weaknesses of adjustment which may change with age. However, the absence of direct comparisons of epileptics and controls to standardized norms leaves any conclusions regarding levels of pathology indeterminable. Continued study of these issues is warranted. Emphasis must continue to be placed on the standard, objective assessment of a variety of personality variables which can be compared to normative standards before any definitive conslusions may be drawn.

The present study examines age-related differences in the psychosocial characteristics of a sample of epileptic children based on both self-reported and parent-reported data. The investigation includes comparisons with established norms and between parent and child assessments.

Methods

Subjects. All subjects were drawn from the patient pool of the Epilepsy Center of the University of Virginia Hospital. Subjects between the ages of five and 16 who had completed the Missoui Children's Picture Series (Sines, Pauker & Sines, 1974) and whose mothers had completed the Missouri Children's Behavior Problem Checklist (Sines, Pauker, Sines & Owen, 1969) were included in the present study (N=101). Children ages five to 11 were included in the younger child group and those ages 11 through 16 were assigned to the older group. According

to these criteria 48 children were assigned to the young group, 33 to the older. Table 1 provides descriptive demographic and diagnostic information for the two groups.

Insert Table 1 about here

Approximately equal numbers of males and females were represented within each age classification and the two groups did not differ significantly regarding socioeconomic status, Full Scale IQ, or primary diagnosis. The two groups did differ in regard to age at onset of seizures and duration of seizures such that the older group's mean onset was two years later and duration was two years longer than that of the younger group.

Measures. The Missouri Children's Picture Series (MCPS) was chosen for adminstration to the children because it provides an assessment across a variety of domains which would allow a pattern of relative strengths and weaknesses to emerge. The instrument is a nonverbal personality measure which requires the child to sort pictures into preferred and non preferred activities and has been standardized on a large sample of children ages 6 to 16. It yields scores on dimensions of conformity, masculinity-feminity, maturity, aggressiveness, hyperactivitiy, inhibition, sleep disturbance and somatization. The scores on each dimension are converted to standardized scores (T-scores)with $\bar{X}$=50, SD=10, based on yearly age intervals which greatly enhances the interpretability of results. Since gender differences were not a focus of the present

study, the masculinity-femininity subscale was not used in subsequent analyses.

The Missouri Children's Behavior Problem Checklist (MCBCL) was administered to the mothers of the children in this sample. The MCBCL is a 70 item true-false checklist which yields scores on six subscales, five of which are compatible with scales on the MPS: agression, inhibition, activity level, sleep disturbance, somatization, and sociabiliti. Normative data has been published for parents of males ages 5 to 16.

Analysis. To compare the epileptic children's scores to the norms provided for the Missouri Picture Series, a series of Z tests were performed for each subscale. Similar analyses were conducted for parents' scores on the MCBCL with the addition that a 2 x 2 ANOVA was conducted to ensure there were no differences between sexes. Males and females were compared separately since the published norms were based on males only.

To determine whether the epileptic children demonstrate age related differences in personality functioning, a one way multivariate analysis of variance (MANOVA) was conducted with age group (younger vs. older) as the independent variable and the 7 MCPS scores as the dependent variables. Standardized discriminant scores were calculated to determine the pattern of subscale scores which contributed to age differences.

Finally, to examine the relationship of age to parent reports of behavior a one way MANOVA was conducted with age group (older vs. younger) as the independent variable and the six subscales of the MCBCL as the dependent measures. Standardized discriminant scores were also cal-

culated.

Results

To determine whether the epileptic children in the present sample demonstrated a level of personality dysfunction higher than that of the norm, and test statistics were calculated on each subscale for each of the two age groups. The results (summarized in Table 2) clearly show that the scores of both younger and older children were well within "normal" limits for the scale. Thus neither younger nor older epileptic children appeared to be at any greater risk for personality problems than the population at large, based on their own self-reports.

Insert Table 2 about here

To determine whether there were age differences associated with personality characteristics of epileptic children, a one way multivariate analysis was conducted (Table 3) which demonstrated a significant difference between the responses of younger and older children. The pattern of subscales which best discriminated the two age groups indicated that higher activity levels were more characteristic of younger than older youths and that the older youngsters responded in a manner that suggested some immaturity for their age. However, it must be emphasized that while these differences were significant they reflect a pattern that operates within normal limits and does not imply a pathological level of functioning.

Insert Table 3 about here

Parents reports of their children were analyzed along similar lines but demonstrated a very different set of results. Prior to conducting Z tests between the parent subscale scores and published norms, 2 x 2 (a-e x gender) ANOVAS were performed on each subscale to ensure that males and females were similar across both age groups. This was done to enable a comparison to the norms which were generated on a male sample only. To accommodate for the large numbers of F tests, an alpha level of .01 was chosen to determine significance. Males and females were rated similarly across both age groups by their mothers (Results summarized in Table 4). Subsequently their scores were averaged within age groups and the scores of each age group were compared to the published norms by means of Z tests. (Results in Table 2). In sharp contrast to the results based on child self-report, the mothers reported a much higher than normative level of behavior problems for the epileptic children in the areas of aggression, sleep disturbance and somatization. In addition they rated older children as significantly more inhibited and over active. However it is important to note that mothers also reported the epileptic children to be significantly more sociable than the normative population, an area of positive functioning.

When the mother reported behaviors for younger children was compared with that of older youths by means of a oneway MANOVA (Table 5) no significant differences were found. Thus, mothers report no age pattern related to their child's behaviors but rather report an overall level of problems that exceeds those reported by mothers in the normative general population sample.

Discussion

Are epileptic children at greater risk for psychological problems and do such risks differ with age? The results of the present study indicate that the answer is in part determined by the individual to whom one addresses the question. Information derived from child self-reports leads to answers different from those based on mothers' reports.

Child self-reports. While the literature dealing with childhood epilepsy suggests that these children are at greater risk for self-reported psychological problems such studies are based on the comparison of an epileptic sample with a control and implies that the control group sets the norm from which the epileptics deviate. The assumption suggests that difference indicates deficit. The present study chose, rather, to compare a sample of epileptic children to standardized age norms and found no significant deficiencies among the epileptic children across a variety of behavior problem areas. Thus in terms of conformity, maturity, aggression, inhibition, hyperactivity, sleep disturbance and somatization the epileptic children in this study appear to be at no greater risk than the general population. Such results do not necessarily directly contradict previous research, since it is quite possible for epileptic children to differ from normal controls and still remain within the overall range of "normal" functioning. While a replication study should be conducted comparing epileptic and non-epileptic samples both to each other and to the norms, the data from the present study is sufficient to question the notion that any differences epileptics may demonstrate are necessarily pathological.

In addition, still within "normal" limits, epileptic children demonstrated significant age differences in self-reported personality patterns. The pattern suggests that higher activity levels are more characteristic of younger children while relative immaturity is more commonly reported by older children. Sines (Note 1) reports that MCPS high activity scores are often found among children with school problems and low levels of maturity are associated with delayed developmental milestones. However, such findings were established for samples of children with scores exceeding the "normal" range and are not appropriately applied to the current sample's results. The pattern in the parent study does indicate that older epileptic children differentially endorse items on these scales in comparison to younger children and suggests that an age related pattern of adjustment may exist for these children which warrants further investigation and suggests the appropriateness of taking a developmental perspective.

The importance of a developmental framework raises an important issue for research with epileptic children as well as other chronic illnesses. It should be noted that age differences were confounded with differences between the two groups in age at onset and duration of the seizure disorder. The confound highlights an important issue for research with children suffering chronic illnesses. Since age for any chronic illness can be defined as: age=onset age + duration the three factors are by nature confounded and totally determined. To know any two pieces of information defines the third. Thus the effects of current age, onset age and duration can never be totally determined

independent of one another in a single study. It is entirely possible that the age differences are really reflections of differences in onset or duration. The current study recognizes this problem and the authors are engaged in continuing research to address this issue. Since the older group (with later onset) demonstrated greater immaturity it seemed unlikely that age of onset was the determining factor. However, a definitive answer cannot be given on the basis of a single study. Further research will be needed before one can differentiate those characteristics most closely related to current age, onset age or duration.

Parent reports. In contrast to the optimistic picture given by the child self-report data, the mothers in this sample consistently depicted their children as evidencing behavioral problems significantly greater than that of the normative sample, regardless of age. In fact, mothers reported no significant differences between age groups. Rather, they reported the epileptic sample to show a greater than "normal" number of behavior problems related to aggression, inhibition, activity level, sleep disturbance, somatization and, in a positive direction, more sociability than the normative sample. No particular pattern emerged. Rather, the mothers reported their children both as more sociable (consistent with previous studies) and more beset by behavior problems across all other domains. How can two so disparate reports be resolved?

First it is important to address the possible influence of social desirability response sets on the part of the children or, negatively, on the part of the parents. Interviews of child report, the MCPS include a "conformity" scale which is designed to reflect the degree

to which the child's responses on a number of commonly endorsed items agrees with those results given by the normative sample. The results suggest that the epileptic sample gave "conformity" responses which neither over-endorsed nor under-endorsed items compared to expected norms. Thus it appears that these children were not operating within a response set which would invalidate the findings.

Alternatively, perhaps the mothers were demonstrating a response set. Although not specific to an epileptic sample, several researchers have examined the types of response biases which may affect parent report data. McCord and McCord (1961) found that parents in a non-referred sample tended to present a more culturally stereotyped report of family functioning during interviews, characterized by less parental rejection and clearly differentiated roles. LaPouse and Monk (1958) also found variable agreement between mother and child reports in a clinic setting. Mothers tended to report higher activity levels, and less aggression, sleep disturbance and stuttering than reported by the child. In addition, Schopler and Loftin (1969) suggested that parents experience a form of "test anxiety" in reporting behaviors of a target child that is not experienced when discussing a non-target sibling. Certainly parents are subject to these influences. But one would expect "over"-reporting or "under"-reporting (in comparison to child report) to vary with the type of behavior tapped and not to generalize across all domains. Simple positive or negative social desirability response set does not adequately explain why mothers reported higher levels of both problem and non-problem behaviors (e.g., sociability). The pattern of both greater negative and positive behaviors is not consistent with

a simple response set that operates to consistently deny or draw attention to problems.

If a simple positive or negative response set can be ruled out, perhaps the pattern of results suggests that these children are at risk for conduct disorders. Such a diagnostic pattern might explain why the parent can perceive problems where the child experiences little anxiety or distress. This would be an adequate explanation had mothers reported elevated scores on the activity level and aggression subscales which tap behaviors characteristic of acting-out behavior problems. However, while parents did report more problems in these domains, they also endorsed more problems across the remaining subscales which tap more "neurotic" or anxiety based behaviors such as inhibition, sleep disturbance and somatization. Thus it does not appear that the pattern of mother-child results is consistent with an interpretation of conduct disordered problems for the sample.

Although it is tempting to search for an explanation which "proves" whether the mother's reports or children's reports are more valid, any such attempt would be artificial and ignore important information. Since both measures have demonstrated sufficient reliability and validity for use as research instruments it is more likely that they both reflect "true" results for this sample. Both parents and child reports are somewhat independent assessments of the children studied. It is quite likely that parent reports attest to the special constraints and management responsibilities the parents of epileptic children face, while the child reports indicate the success they achieve in fostering sound individual

psychosocial adjustment in their offspring. Support for this interpretation has been offered by Voysey (1975) who contends that parents of "disabled" children (regardless of diagnosis) are under a set of special societal constraints which require that they interpret the disabled child's behavior to others. As a result, typical mistakes, transgressions and even successes are taken more seriously and viewed as symptomatic of the child's condition. Mothers of epileptic children may be attuned much more closely to their child's behaviors and make discriminations interpretations, and attributions that parents of nonhandicapped children do not. Such an explanation better suit the results of this study and may explain why the mothers of epileptic children endorsed a greater number of both problem and non problem items.

This interpretation suggests that parents of handicapped children in general may respond to standard problem checklist measures in a manner somewhat different from that of nonhandicapped populations. Results of investigations which rely solely on parent reports should be interpretted with caution. This does not imply that such reports are less valid, only that data from parent report be supplemented with other information as well. The disabled child occupies a somewhat special role in society that is related to the meaning assigned to the child's condition. As such, his/her behaviors are often viewed from different perspectives by parents, teachers and peers. Any attempt to objectively and completely understand their behavior requires convergent information from a variety of sources.

Finally, the answer to whether epileptic children are at increased risk for psychological problems may depend on how one defines psychological problems. If one interprets this to mean referral for behavioral

problems, which is directly related to parental views of the child, the answer is quite probably yes. If one defines psychological risk as the level of distress experienced by the child, the sample studied suggests that epileptic children do not report experiencing more psychological impairment than the general population. However, a third perspective is needed. Perhaps psychological risk is best conceived of as psychosocial adjustment. Do epileptic children experience more problems adjusting to societal demands than nonepileptic youngsters? Data addressing this question should be sought from additional sources outside the family including teachers, other adult caretakers and peers. Thus psychological risk can be defined as increased likelihood of referral, greater personal distress or recognizable problems in social adjustment. Any attempt to responsibly address the issue should consider all three perspectives.

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Footnotes

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Table 1

Descriptive Information for the Younger Children and Older Children Groups

Information		Younger (N=48)	Older (N=53)
Gender N		Males = 24	Males = 28
		Females = 24	Females = 25
Age[a]	$\bar{X}$	104.4	158.9
	SD	20.4	14.9
SES[b]	$\bar{X}$	62.9	61.7
	SD	11.6	15.6
Primary Seizure Diagnosis[c] N			
Partial elementary		9	6
Partial complex		8	9
Partial secondarily generalized		10	5
Generalized		25	29
Age at onset of seizures[a]	$\bar{X}$	46.3	73.4
	SD	30.0	48.7
Duration of seizures[a]	$\bar{X}$	58.1	82.2
	SD	32.5	47.8
WISC-R Full Scale IQ	$\bar{X}$	80.3	81.8
	SD	17.1	18.2

[a] in months

[b] SES: socioeconomic status - higher score indicates lower status (Myers and Bean, 1968).

[c] Seizure type classified by the International Classification (Gastaut, 1970).

Table 2

Comparison of age groups to norms for the MCPS and MCBCL

	MCPS							MCBCL					
	Conformity	Maturity	Aggression	Inhibition	Activity	Sleep Disturbance	Somatization	Aggression	Inhibition	Activity	Sleep Disturbance	Somatization	Sociability
Norms													
$\bar{X}$	50	50	50	50	50	50	50	5.74	4.16	4.31	2.08	1.37	4.64
SD	10	10	10	10	10	10	10	4.43	2.85	2.64	2.12	1.55	2.41
Young group N=48													
$\bar{X}$	43.3	49.0	54.3	51.6	53.0	51.1	51.4	7.4**	5.0*	5.1*	3.1**	2.4**	6.4**
SD	14.4	13.6	10.1	12.4	9.9	10.4	11.3	3.1	1.9	2.1	1.7	1.4	2.4
Older Group N=53													
$\bar{X}$	47.5	40.8	55.6	51.3	51.6	49.9	56.6	7.3**	5.5**	5.2**	3.6**	2.1**	6.2**
SD	11.6	11.9	11.8	12.2	10.6	10.0	10.7	3.7	2.6	2.8	2.2	1.5	2.2

* p .05

**p .01

Table 3

MANOVA of MCPS scores for younger and older groups

Test	df	F Younger/Older	p	Standardized Discriminant Scores
MANOVA	7.93	4.802	.001	
Conformity				-..258
maturity				-1.637
aggression				.092
inhibition				.477
hyperactivity				-1.188
sleep disturbance				.456
somatization				.231

Table 4

2 x 2 Univariate ANOVA to test for age x sex differences p .01 to correct for F's

Test	Mean SQ	F	df	p
ANOVA age group x sex				
Aggression	3.37	.27	1,97	ns
Inhibition	.19	.03	1,97	ns
Activity	7.08	1.12	1,97	ns
Sleep disturbance	23.34	6.01	1,97	ns
Somatization	1.38	.63	1,97	ns
Sociability	1.85	.36	1,97	ns

Table 5

Manova of MCBCL Scores for parents reports of younger and older groups

Test	df	F Younger/Older	p	Standardized discriminant scores
MANOVA	6,94	.803	ns	
aggression				.340
inhibition				-.128
activity				-.025
sleep disturbance				-.163
somatization				-.887
sociability				.495